

providing a silicon substrate;

forming a transparent insulator on a front surface of said silicon substrate;

forming a plurality of thin film transistor structures and a plurality of corresponding transparent electrodes on said transparent insulator;

forming a black matrix on said plurality of thin film transistor structures;

bonding a transparent substrate onto the front surface of said silicon substrate;

removing said silicon substrate; and

etching said transparent insulator to expose said plurality of corresponding transparent electrodes.

2. (Amended) A method for manufacturing a thin film transistor panel of claim 1, wherein said transparent insulator is SiO_x .

3. (Amended) A method for manufacturing a thin film transistor panel of claim 1, wherein said transparent insulator is SiN_x .

4. (Amended) A method for manufacturing a thin film transistor panel of claim 1, wherein the thickness of said transparent insulator is less than 1 micrometer.

5. (Amended) A method for manufacturing a thin film transistor panel of claim 1, wherein said transparent electrode is made of indium tin oxide.

6. (Amended) A method for manufacturing a thin film transistor panel of claim 1, wherein said transparent substrate is a glass substrate.

AZ
cmk
7. (Amended) A method for manufacturing a thin film transistor panel of claim 1, wherein said transparent substrate is a polymer substrate.


8. (Amended) A method for manufacturing a thin film transistor panel of claim 1, wherein the step of removing said silicon substrate includes chemical mechanical polishing.

9. (Amended) A method for manufacturing a thin film transistor panel of claim 1, wherein the step of removing said silicon substrate includes an etching process.

10. (Amended) A method for manufacturing a thin film transistor panel of claim 1, further comprising forming an alignment mark on said transparent insulator.

12. (Amended) A method for manufacturing a thin film transistor panel of claim 1, wherein the step of forming said plurality of thin film transistor structures and said plurality of corresponding transparent electrodes further comprises:

forming a transistor film and a transparent electrode on said transparent insulator;

 forming a gate insulator covering said transistor thin film and said transparent electrode;

forming a gate electrode on said gate insulator corresponding to a position of said transistor thin film;

forming an interlayer on said gate electrode and said gate insulator;

forming a metal contact layer on said gate insulator; and

forming a passivation layer on said metal contact layer.

13. (Amended) A method for manufacturing a thin film transistor panel of claim 12, wherein the transistor thin film is selected from the group consisting of polycrystal silicon(p-Si), polycrystal germanium (p-Ge), polycrystal silicon germanium

(p-SiGe), crystal silicon (c-Si), crystal germanium (c-Ge), and crystal silicon germanium (c-SiGe).

14. (Amended) A method for manufacturing a thin film transistor panel of claim **12**, further comprising forming a color filter on said passivation layer.

15. (Amended) A method for manufacturing a thin film transistor panel, comprising at least the following steps:

providing a silicon substrate;

A2
with forming a transparent insulator on a front surface of said silicon substrate;

forming a plurality of thin film transistor structures on said transparent insulator;

bonding a transparent substrate onto the front surface of said silicon substrate;

removing said silicon substrate; and

forming a plurality of transparent electrodes corresponding to said plurality of thin film transistor structures on a bottom surface of said transparent insulator.

16. (Amended) A method for forming a thin film transistor panel of claim **15**, wherein said transparent insulator is SiO_x.

17. (Amended) A method for manufacturing a thin film transistor panel of claim 15, wherein said transparent insulator is SiN_x .

18. (Amended) A method for manufacturing a thin film transistor panel of claim 15, wherein the thickness of said transparent insulator is less than 1 micrometer.

19. (Amended) A method for manufacturing a thin film transistor panel of claim 15, wherein said transparent electrode is made of indium tin oxide.

AZ
Cont
20. (Amended) A method for manufacturing a thin film transistor panel of claim 15, wherein said transparent substrate is a glass substrate.

21. (Amended) A method for manufacturing a thin film transistor panel of claim 15, wherein said transparent substrate is a polymer substrate.

22. (Amended) A method for manufacturing a thin film transistor panel of claim 15, wherein the step of removing said silicon substrate includes chemical mechanical polishing.

23. (Amended) A method for manufacturing a thin film transistor panel of claim 15, wherein the step of removing said silicon substrate includes an etching process.

24. (Amended) A method for manufacturing a thin film transistor panel of claim 15, further comprising forming an alignment mark on said transparent insulator.

25. (Amended) A method for manufacturing a thin film transistor panel of claim 15, further comprising forming a black matrix on said plurality of thin film transistor structures before bonding said transparent substrate onto the front surface of said silicon substrate.

26. (Amended) A method for manufacturing a thin film transistor panel of claim 15, wherein the step of forming said plurality of thin film transistor structures and said plurality of corresponding transparent electrodes further comprises:

forming a transistor thin film on said front surface of said transparent insulator;

forming a gate insulator covering said transistor thin film and said plurality of transparent electrodes;

forming a gate electrode on said gate insulator corresponding to a position of said transistor thin film;

forming an interlayer on said gate electrode and said gate insulator;

forming a metal contact layer on said gate insulator; and

forming a passivation layer on said metal contact layer.

27. (Amended) A method for manufacturing a thin film transistor panel of claim 26, wherein said transistor thin film is selected from the group consisting of polycrystal silicon(p-Si), polycrystal germanium (p-Ge), polycrystal silicon germanium (p-SiGe), crystal silicon (c-Si), crystal germanium (c-Ge), and crystal silicon germanium (c-SiGe).

A24
int
28. (Amended) A method for manufacturing a thin film transistor panel of claim 15, further comprising forming a color filter on the bottom surface of said transparent insulator before forming said transparent electrode.

29. (Amended) A method for manufacturing thin film transistor panel, comprising at least the following steps:

providing a silicon substrate;

bonding a transparent substrate onto a back surface of said silicon substrate;

reducing the thickness of said silicon substrate to form a layer of crystal silicon thin film;

forming a plurality of thin film transistor structures on said crystal silicon thin film;

etching said thin film transistor structures and said crystal silicon thin film to form a suitable pixel via;

forming a planarization layer on said thin film transistor structures and said pixel via; and

forming a plurality of transparent electrodes corresponding to the thin film transistor structures on said planarization layer.

AA
Went **30.** (Amended) A method for manufacturing a thin film transistor panel of claim **29**, wherein the thickness of said transparent insulator is less than 1 micrometer.

31. (Amended) A method for manufacturing a thin film transistor panel of claim **29**, wherein said transparent electrode is made of indium tin oxide.

32. (Amended) A method for manufacturing a thin film transistor panel of claim **29**, wherein said transparent substrate is a glass substrate.

33. (Amended) A method for manufacturing a thin film transistor panel of claim **29**, wherein said transparent substrate is a polymer substrate.

34. (Amended) A method for manufacturing a thin film transistor panel of claim 29, wherein the step of removing said silicon substrate includes chemical mechanical polishing.

35. (Amended) A method for manufacturing a thin film transistor panel of claim 29, wherein the step of removing said silicon substrate includes an etching process.

36. (Amended) A method for manufacturing a thin film transistor panel of claim 29, wherein the step of forming said thin film transistor structures further comprises:

A2 added
forming a source region and a drain region on said crystal silicon thin film;

forming a gate insulator covering said transistor thin film and said transparent electrode;

forming a gate electrode on said gate insulator;

forming an interlayer on said gate electrode and said gate insulator; and

forming a metal contact layer on said gate insulator.

37. (Amended) A method for manufacturing a thin film transistor panel of claim 29, wherein the planarization layer is also a color filter.
